

**System and Method for Embedded Java Memory  
Footprint Performance Improvement**

**ABSTRACT**

A system and method are provided to allow demand  
5 loading and discarding of Java executable image (JXE)  
files. The virtual machine allocates an address space for  
a requested JXE program. The read-only portion of the JXE  
file is memory mapped from its nonvolatile location to the  
allocated memory space using read-only mapping and the  
10 read/write section of the JXE file are loaded into memory.  
When a page of the JXE program is needed, a page fault  
occurs if the read-only portion has not been loaded into  
memory. The operating system's page fault handler  
retrieves the needed page(s) from the nonvolatile storage  
15 location based upon the mapping data that resulted from the  
previously performed memory mapping. Because the read-only  
section of the JXE file is memory mapped using read-only  
mapping, the operating system's paging process is free to  
discard previously loaded memory pages that contain read-  
20 only portions of the JXE file.